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ABSTRACT

This paper focuses on the relationship between adult-child interactions and the developing cognitive competence of young children as rated by the Mediated Learning Experience (MLE) Scale. The scale was devised to reflect 10 criteria of adult-child interaction hypothesized to comprise an MLE and therefore to enhance children's cognitive development, as described by M. Jensen and R. Feverstein (1987): (1) intentionality and reciprocity, when the mediator deliberately guides the interaction in a chosen direction and the learner responds; (2) meaning, the significance and purpose of an activity; (3) transcendence, linking a specific activity with others to promote the acquisition of principles or concepts; (4) competence, a positive belief in one's ability, the motivation to try, and the determination to persevere; (5) self-regulation and control of behavior, monitoring a task in order to adjust one's behavior appropriately; (6) sharing behavior, the interdependence of the mediator and the learner, referring to the mutual need for cooperation at a cognitive and affective level; (7) individuation, the sense of uniqueness and difference from others which fosters personal autonomy; (8) goal planning, the setting, planning, and achieving of goals through an explicit process; (9) challenge, a feeling of determination and enthusiasm to cope with novel and complex tasks; and (10) self-change, the felt responsibility for being aware of changes within oneself, necessary to become an independent and autonomous learner. Practical advice on how teachers and parents can use MLEs to elicit children's cognitive potential is presented. (Contains seven references.) (KDFB)

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USING MEDIATED LEARNING EXPERIENCE TO ENHANCE CHILDREN'S THINKING

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ABSTRACT

USING MEDIATED LEARNING EXPERIENCE TO ENHANCE CHILDREN'S THINKING

This paper focuses on the relationship between adult-child interactions and the developmental cognitive competence of young children as rated by the Mediated Learning Experience (MLE) scale. The scale was devised to reflect ten components of adult-child interaction hypothesised to enhance cognitive development of children, as described by Reuven Feuerstein. Practical activities on how mediated learning experiences can reach out and elicit children's cognitive potential are discussed.

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USING MEDIATED LEARNING EXPERIENCE TO ENHANCE CHILDREN'S THINKING

Researchers in cognitive education have argued that by teaching fundamental principles of thought, perception, learning and problem-solving, children can become effective learners. Feuerstein (1980) and Haywood (1986). This perspective is based on three assumptions. First cognitive processing can be substantially modified through effective intervention changing the expected course and outcome of development. Secondly, the learning of effective cognitive processes occurs through mediated learning experiences (MLE) and lastly, more efficient cognitive functioning can be taught through systematically providing mediated learning experiences. Samuels (1987).

Mediated learning is the process by which a mediator organises and interprets the world to a child. When an individual gives meaning to events, helps children select relevant from irrelevant variables, assists in abstracting rules for regularly occuring phenomena, and generally attempts to develop children's abilities to think, that individual is engaged in mediated learning. MLE begins within the family context with parents and significant others passing on cultural norms, values, and modes of thought from one generation to another. A lack of MLE, due to a variety of reasons inherent in the mediator or the child, leads to deficient cognitive functioning and low levels of modifiability. The child is not able to adapt to and learn from interactions in his/her environment.

Feuerstein (1980) maintains that many problems in learning are the result of insufficient or inadequate mediated learning experience. He has developed a program, Instrumental Enrichment, to provide MLE in a systematic way in the classroom. The general goal of the program is to teach children prerequisites of thinking and learning so that they will learn how to learn and be better able to adapt and adjust to everchanging life conditions.

Systematic training in learning and problem solving skills are given based on fourteen sets of exercises, each focussing on a particular aspect of cognitive functioning. The activities try to stay away from pure content areas. The teacher's task is to encourage and motivate an awareness of cognitive processes and their transfer to outside personal, social and academic situations. The following cognitive functions are enhanced such as comparative behaviour, systematic search, problem definition, planning, hypothesis testing, spatial and temporal orientation, and the ability to consider two or more sources of information simultaneously.

MLE has been used extensively in Israel, Venezuela, United States, Canada and in Europe where adolescents and adults have been culturally disadvantaged or mentally handicapped. Evaluations of the Instrumental Enrichment program have shown

considerable gains in groups receiving MLE. (Haywood etal 1982; Greenberg 1990). In addition, teachers who use the program are very enthusiastic not only in terms of its effect on the children's thinking but in terms of its effect on their own teaching skills. Teachers report that their ability to understand each child's learning problems, and thus intervene effectively, improves after teaching this program. (Samuels 1987).

MLE appears to play a key role in children's acquisition and refinement of knowledge and consequently , in their development of effective learning. It is my contention that the proper understanding of the role of MLE in the early years of childhood will result in a widespread implementation of a sound pedagogical technique. It is a tool that facilitate effective learning shared by the teacher/mediator and which nurture independent learning and thinking in children.

The purpose of this paper is to describe and discuss the important components of MLE which can be developed for the preschool and early elementary school child. It is suggested that many teachers need to learn to use higher quality MLE if they are going to enhance metacognitive abilities in young children.

MEDIATED LEARNING EXPERIENCE: ITS RATIONALE

Feuerstein and his colleagues have developed a special kind of interaction strategy in a learning situation which aims at promoting effective thinking and learning. This practical tool is based on the theories of structural cognitive modifiability. (Feuerstein etal 1980). The basic premise underlying structural cognitive modifiability is that human beings throughout their lives have a unique capacity to change or modify the structure of their cognitive functioning in adaptation to changing demands.

Feuerstein believes that there are two modalities of learning: a direct approach and a mediated approach. (Skuy 1991). The direct approach to learning is based on Piaget's formula of S-O-R which translated means that the organism (O) or individual learner interacts directly with the stimuli (S) of the surrounding world and responds (R).

In this kind of interaction with the environment learning is incidental. Consider an example of a child walking through the garden. He directly interacts with the flowers and other stimuli. He may smell the flowers, or feel their texture or even watch a bee settling on various flowers. While the kind of learning that takes place as a direct result of such experiences is fundamental and necessary, it is incidental and according to Feuerstein not enough to ensure that effective learning takes place.

Mediated learning is the second and vital approach that ensures effective learning. Feuerstein develops Piaget's formula of S-O-R further to include a human mediator between the world of stimuli, the organism and the response. His new formula for

mediated learning is then S-H-O-H-R, where H is the human mediator. The human mediator interposes himself between the learning organism and the world of stimuli to interpret, guide and give meaning to the stimuli. In this kind of interaction learning is intentional.

Consider again the example of the child in the garden. If the mother were present as a mediator, she would focus the child's attention on specific stimuli and thereby interpret and give meaning to the child's encounter with the flowers. She could focus the child's attention on similar and different colours and textures- thereby teaching the child the important thinking skill of comparison. Or she could interpret the bee's dance of pollination thereby giving meaning to the bee's actions and showing the interconnections or relationships among stimuli. It is this kind of interaction, where the mediator intervenes, that results in the child developing learning sets that are the pre-requisite for proper cognitive functioning and adaptation to the world.

Both forms of exposure, direct and mediated, are necessary for optimal development. Feuerstein believes that it is MEDIATED learning that allows the child to be more receptive to DIRECT exposure and benefit more from it. This is because mediation is a kind of parent and child interaction that develops the basic attitudes and competence for self-directed learning.

When a child does not interact effectively with the environment, or experiences difficulty with learning, we as educators develop what Feuerstein calls a "stiff finger". This is where the index finger points stiffly in the direction of the child indicating that the problem and failure is fixed firmly with the child. In mediation however, learning is an interaction between child and mediator and fingers have to be pointed in both directions. (Skuy 1991)

MEDIATED LEARNING EXPERIENCE: ITS CRITERIA

Jensen and Feuerstein (1987) suggest ten criteria for an interaction to be considered a MLE. The first five will be discussed here as they are most relevant at the preschool level. The first three criteria, intentionality, transcendence and meaningfulness are always present, while a fourth and fifth, regulation of behaviour and mediation of competence, are often present. However mediation is a dynamic and open process and should not be rigidly applied nor seen to be fixed at ten criteria. The following list of the ten criteria is taken from Mervyn Skuy's Mediated Learning Experience: Working Manual (1991).

INTENTIONALITY and RECIPROCITY

Mediation of intentionality occurs when the mediator (eg parent, teacher, childcare giver) deliberately guides the interaction in a chosen direction by selecting, framing and interpreting specific stimuli. Mediation is a purposeful intentioned act, where the mediator actively works to focus attention on the stimuli.

Reciprocity occurs when there is responsivity from the mediatee (learner/child) and an indication of being receptive to and involved in the learning process. The mediatee is open to the mediator's input and demonstrates cooperation.

Mediation of intentionality and reciprocity is the first part of the MLE puzzle. To learn we need to be able to create significance from the vast amount of stimuli which continually impact on our senses. We need to isolate particular stimuli and interact with them. This is achieved through a reciprocal relationship between the mediator and the mediatee. The mediator isolates and interprets the stimuli (intentionality) and presents them in such a manner that the mediatee responds (reciprocity).

In the home, intentionality and reciprocity seem to begin naturally with the mother's need to interact with her newborn and to engage in eye contact. She gradually directs the child's attention to objects, like the rattle or mobile. In doing so she frames the stimulus for the child. This in turn creates in the child the ability to focus on the mother's face, establish eye contact and with time engage in imitation and reciprocal smiling. Thus the intentionality of the mother evokes the reciprocity of the child and vice versa. This behaviour can be contrasted with that of deprived children who do not receive consistent nurturing and who thus do not develop the ability to engage in reciprocal eye contact. As Feuerstein describes, "their eyes slip off your face as if it were glass".

In the classroom, in certain situations, there may be certain obstacles to intentionality and reciprocity. For instance the teacher may wait for advances from the child and believe it is important NOT to initiate the child's interaction with stimuli. In this case there is no intentionality. A second situation is where the teacher actively invites interaction in a well prepared, relevant lesson but where the students don't receive the advances of the teacher due to tiredness, general lack of interest or motivation, or lack of perceived relevance of the given topic, or any other subjective reason. In this case there may be no reciprocity.

The three elements involved in and influencing intentionality and reciprocity are therefore:

-the mediator(parent/teacher/caregiver) - whose language, pace, pitch and gestures can be varied to enhance intentionality.
-the mediatee(child) - whose attention span, interest level

and availability affect reciprocity.
-the stimulus (presentation of ideas and materials) - which can be varied in terms of amplitude, repetition, modality etc to enhance both intentionality and reciprocity.

MEANING

Mediation of meaning occurs when the mediator conveys the significance and purpose of an activity. The mediator shows interest and emotional involvement, discusses the importance of the activity with the child and elicits an understanding of why the activity should be done.

Mediation of meaning is the second piece of the MLE puzzle. The first piece of the puzzle, the mediation of intentionality and reciprocity, is concerned with selecting and framing an activity or object. Mediation of meaning is concerned with charging that activity or object with value and energy, which makes it relevant for the mediatee.

The process of investing stimuli with meaning often involves communicating ethical and social values. Mediation of meaning is "the process by which knowledge, values and beliefs are transmitted from one generation to the next" (Feuerstein 1980 pg 13). Mediation of meaning occurs by investing significance at both cognitive (intellectual) and affective (emotional) levels:

*values and beliefs are communicated at the cognitive level
*energy and enthusiasm are communicated at the affective level.

A caregiver mediates intentionality and reciprocity when he prepares a child for her bath by putting in the water and helping her undress. He would be mediating meaning by encouraging enjoyment of the water and giving reasons for the bath experience. In this way he would help the child become eager for the activity and understand its significance.

In response to critics who ask what right mediators have to impose their values on the mediatee, Feuerstein in turn asks what right they have not to. When the mother gives meaning to everything she does, the child begins to want and need meaning in all aspects of his life. The process of investing meaning stimulates the child to ask questions. It sets the basis for all further inquiry, for future challenge and possible rejection of that meaning. Without a firm understanding of the environment a child cannot be empowered to respond to it, either to accept it or to transform it. Without mediation of meaning the child is deprived of access to cognitively and affectively enriched stimuli. For these reasons Feuerstein believes it is every mediatee's right to recive mediated learning experiences and it is the mediator's duty to give it.

TRANSCENDENCE

Mediation of transcendence occurs when an interaction goes beyond the immediate and direct need thereby enlarging and diversifying the need system of the child. The goal in mediating transcendence is to promote the acquisition of principles, concepts, or strategies, which can be generalised to issues beyond the presenting problem.

Mediation of transcendence is the third part of the MLE puzzle. Transcendence is the third essential criteria for rendering an interaction a mediated learning experience. In essence any act which is a MLE must include intentionality and reciprocity, meaning and transcendence.

Mediation of transcendence occurs when the mediator links a specific issue or activity with others. This moves the learner beyond the direct and immediate need elicited by an interaction and bridges to related issues and activities. In doing so the mediator enlarges the need system of the child to include the for understanding, reflective thinking and forming relationships between things.

Transcendence develops in the child a deeper understanding of the world, a perception of how things are interconnected, a curiosity to inquire and discover relationships between things and a desire to know more about things and seek explanations. The mediation involves finding a general rule that applies to related situations, linking events in the present with future and past events, engaging in reflective thinking to reach an underlying understanding of a situation and thinking laterally about experiences and issues.

COMPETENCE

Mediation of competence occurs when the mediator helps the child develop the self-confidence to engage successfully in a given act. It is not necessarily the outcome of success, but rather the mediatee's perception of it. Mediation of competence is the fourth part of the mediated learning experience puzzle. It involves developing the child's self-confidence. Self-confidence is empowering: it facilitates independent thought, encourages motivated action and contributes towards the realization of goals. As such, mediation of competence is an invaluable component of any mediated learning experience. Competence should not be seen in absolute terms nor as an innate ability or deficiency, but rather as a process. Competence on a task improves with experience and maturity.

Mediating competence involves instilling in the child a good mental set, a positive belief in her ability, the motivation to try and the determination to persevere. Ways in which competence can be mediated are by selecting stimuli within the level of expertise of the child, by rewarding the child's response to the stimulus, by making explicit the strategies used by the mediatee

which result in a successful experience and by focusing on and making explicit successfully completed parts of an activity, even though the whole might be unsuccessful.

Competence can be easily eroded in the classroom. Education systems which are competitive and product-oriented often focus more attention on errors, rather than on the steps towards success in a task. Negative attention is so often directed toward mistakes, that children begin to define themselves more in terms of their weaknesses than their strengths. This negative perception leads to the type of self-image where the child believes that he is never good enough, irrespective of his achievements. The perceptions that parents and teachers have of children both explicitly and implicitly, have a profound impact on the child's sense of competence. Children often live up (or down) to other's expectations of them, thus resulting in a self-fulfilling prophecy.

SELF-REGULATION and CONTROL of BEHAVIOUR

Mediation of self-regulation and control of behaviour occurs when the mediator intervenes to make the child conscious of the need to self-monitor and adjust behaviour. The rapidity and intensity of the mental activity is modified according to the characteristics of the stimuli and the circumstances.

Mediation of self-regulation and control of behaviour is the fifth piece of the MLE puzzle. Its aim is to encourage children to take responsibility for their own learning and behaviour. It involves teaching children to think about their own thinking (metacognition) and behaviour and to choose appropriate responses to a particular stimulus or given situation. When we dictate to children how to respond and structure their reactions in a situation, then we decrease their chances for autonomy and self-monitoring.

Mediation of self-regulation and control of behaviour involves helping the child analyse the task in order to adjust his behaviour appropriately. For example a common or familiar task can be executed more quickly than a novel task. Adjusting behaviour in response to the particular circumstances of the task involves restraining impulsivity, breaking down complex problems into smaller parts and engaging in a systematic approach rather than wild guessing.

Mediating self-regulation and control of behaviour should be linked to other pieces of the mediated learning experienc puzzle. For examplke, in order to shift the focus of the child from being a passive recipient of information to an active, independent and autonomous learner, the mediation of self-regulation and control of behaviour can be combined with mediating competence, where the child's perception of his success enables him to start taking responsilibity for his own learning. It is also linked to goal planning where envisaging a goal encourages the child to plan and undertake the necessary steps to achieving it.

SHARING BEHAVIOUR

Mediation of sharing behaviour relates to the interdependence of the mediator and the mediatee and of individuals in general. It is the mutual need for co-operation at a cognitive and affective level. Sharing develops empathy through social interaction. This is the sixth piece of the MLE puzzle. It concerns a person's need to connect with others.

Mediation of sharing occurs when the mediator and the child or a group of learners focus on an activity together and respond together. The mediator shares his ideas and feelings and encourages the child to do the same. Sharing is the reciprocal need for cooperation at both an intellectual and emotional level. It involves openly listening to another point of view and being sensitive to the feelings of others.

Mediation of sharing emphasizes co-operation and the result is to promote competence in social interaction. An environment of trust is developed with mutual self-disclosure. Self concept is strengthened when success experiences are shared and failures are worked through with an empathic listener. Sharing ideas both verbally and in written form aids in developing cognitive processes and helps clarify confused thinking. An absence of sharing behaviour results in lonely, emotionally isolated children having difficulty in forming friendships and in communicating with people. These children tend to possess egocentric behaviour.

INDIVIDUATION

Individuation occurs when the mediator fosters within the mediatee a sense of uniqueness and difference. Mediation of individuation encourages autonomy and independence from others, and celebrates the diversity of people. This is the seventh part of the MLE puzzle. It involves fostering the development of the individuals autonomy and unique personality. The mediator acknowledges the differences between people due to past experiences and individual abilities, behavioural styles, motives, emotions and other characteristics, and encourages the child to reach his own potential.

Parents, teachers and caregivers who do not have a belief in the ability of the child to finally assume control and take responsibility for themselves will stifle the individuation and self-expression of the child. In the home, in mediating individuation the parent encourages the child to take control and responsibility for her daily activities. For example, the parent trusts her to take care of her own pets. This promotes autonomy. The parent who makes an effort to show interest in the child's hobbies will develop the unique personality of the child.

In the classroom, individuation would require diversification of the teacher's approach and goals, in order to meet student's

individual differences in ability and temperament. Here the teacher accepts divergent responses and encourages independent and original thinking. She holds the students responsible for their behaviour and distributes responsible tasks to students. She enhances positive aspects of cultural pluralism, ideological and religious differences.

GOAL PLANNING

Mediation of goal planning occurs when the mediator guides and directs the mediatee through the processes involved in setting, planning and achieving goals by making the process explicit. This is the eighth piece of the MLE puzzle and involves encouraging and guiding the child to setting goals and discuss explicit means for achieving them. Elaboration of the process in goal directed behaviour is equally important as accomplishing the task. The child takes initiatives in setting, seeking and reaching objectives.

Setting effective goals calls for certain requirements. The goals should be conceivable and believable. The child should be able to conceptualise, understand and identify the goal and it is difficult to believe in a goal if you have never seen it achieved by someone else. Also these goals must be achievable and modifiable. They must be perceived by the child as accomplishable ie within her capabilities and capable of being monitored and adapted. In addition, effective goals should be desirable and growth facilitating. The child must really want to fulfil the goal, rather than feel that he ought to and goals must not be destructive to the child, to others or society.

Children can be impulsive and have a strong desire for immediate gratification. This can manifest itself on both ends of the spectrum - in the over-indulged child and in the deprived child. The over-indulged child whose requests are immediately satisfied never learns to delay gratification and thus engage in long term goal planning. The deprived child, such as street children, who for their survival have to live in the "here and how" to satisfy basic needs, do not develop the skills for long term planning. When these problems occur, the parent or teacher must help the child develop the ability to delay gratification and feel more in control of achieving his goals through understanding the processes involved. This will lead to greater self-confidence, empathy, autonomy and more positive, resourceful and independent learning.

CHALLENGE

Mediation of challenge occurs when the mediator instills in the child a feeling of determination and enthusiasm to cope with novel and complex tasks. Identifying the steps involved in achieving success is motivation for facing further challenges.

Mediation of challenge is the ninth piece of the MLE puzzle. It

involves evoking in the child the motivation to attempt something new and the determination to persevere with something difficult. In a world that is constantly and rapidly changing, novelty and complexity become the norm and mediating challenge helps prepare the child to master these changes. It involves overcoming both a fear of the unknown and a resistance towards anything difficult, or unusual.

Mediation of challenge can be achieved through a variety of processes, for example the mediator models an open and excited attitude when faced with new and difficult situations; he creates for the child opportunities to face novel and complex tasks. The mediator also encourages creativity, curiosity and originality in the child in confronting new tasks and he rewards success and reflects back the child's feeling of satisfaction and excitement.In addition, he encourages sensible and appropriate risk taking in relation to tasks and situations.

The various criteria of the MLE puzzle are all related to each other. In this instance, there exists a dynamic tension between the mediation of challenge and the mediation of meaning. In mediating meaning there is an emphasis on conserving conventional values, and in mediating challenge the emphasis is on striving for something novel.

SELF-CHANGE

Mediation for self-change occurs when the mediator encourages the child to be aware of the dynamic potential for changes and recognize their importance and value. Mediation for self-change develops within the child a responsibility for being aware of continual changes within himself. This is necessary for the child to become an independent and autonomous learner.

Feuerstein believes that changeability is the most stable characteristic of human beings. It is an inevitable process even though one may be unaware of it or not take full responsibility for such changes. There is also amongst some a resistance to change. It is easier to remain in the "comfort zone", an area where one's level of competence is not challenged.

Essentially an awareness of self-change involves a recognition of self-change: change comes from within oneself. There is an expectation of growth: levels of competence are always changing and improving. Monitoring of changes concerns mapping the changes that take place and a welcome and an acceptance of change.

All the ten components of MLE as discussed above indicate a great advantage of using it as an instructional tool for parents and teachers. This advantage is that the parent or teacher is not asked to replace his own behaviour, which has been culturally determined or produced by his individual preference or style. MLE instructors recommend that parents and teachers use familiar and

preferred interactions. The quality of interaction will then become much more acceptable to them and will also affect their child much more strongly in terms of his structural cognitive modifiability.

In summary, MLE as a theory and as an operational system, allows us to understand human plasticity and modifiablity. It serves as a powerful guide in shaping the interaction of the growing human being. In a way that will permit him to increase his modifiability wherever this has not developed owing to a lack of MLE.

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